



DISPLAYS FAQ

Q Why does it take so long for my projector to power down?

A Projectors need a very bright bulb in order to throw a picture across a room. As well as generating a lot of light, the bulb generates a lot of heat, which has to be dissipated. When the projector is in operation, fans extract the hot air from the casing and expel it out of the casing through an exhaust vent.



Projector bulbs get very hot, so they have to be cooled down when the power is turned off

When you power down a projector it can't just cut all power, as it would leave a very hot bulb with no cooling. The bulb could melt, distort or break and damage your projector. Instead, the bulb is turned off and the fans remain on to remove heat and cool down the projector. Once it reaches a suitably cool temperature, the fans are turned off and the power goes out.

It's very important to let your projector go through this procedure to avoid damaging it. Never remove the power cable or cut power to the projector while it's running.

david@computershopper.co.uk

REVIEW 21.3" LCD

NEC MultiSync LCD2170NX

RATING ★★★★★

PRICE £610 inc VAT

SUPPLIER www.allmacstuff.co.uk

DETAILS www.nec.co.uk

With its 21.3" panel, NEC's MultiSync LCD2170NX is only one inch larger than 20.1" monitors, but it feels much bigger. The display fills your vision if you sit a normal distance away from it.

The LCD2170NX has the same 1,600x1,200 native resolution as 20.1" panels, but the larger screen size is easier on the eye. You can easily work on two vertical documents side by side with this monitor.

As you'd expect from a display of this size, the quality is excellent. NEC provides DVI and D-sub inputs, although the digital input gives the best quality. You can adjust the screen's brightness and contrast using the onscreen display.

The LCD2170NX has a joystick that's used for navigating the menus, but it feels a bit flimsy and cheap to use. Alternatively, you can use the NaviSet software, which lets you adjust the screen's settings using a Windows application.

Viewing angles were among the best we've ever seen; you have to view the screen at extreme angles in order to see a change in brightness. Evenly lit, the panel swept through our display tests and proved to be one of the best performers we've seen. Colours were warmly reproduced and accuracy was very high. Our colour wheel test was produced well, with excellent colour blending and gradation.



It isn't all good news, though; the LCD2170NX has only a 16ms response time. This is not bad for such a large panel, but gamers will probably want a slightly quicker monitor.

That said, at just over £600, the 2170NX is a good £200 cheaper than the 21.3" monitors we reviewed in our round-up of monitors in *Labs*, *Shopper* December 2005 and close in price to a lot of the 20.1" monitors. If you want high resolution that's easy on the eye, this is a good choice.

David Ludlow

✓ Very large screen; excellent colour reproduction

✗ Buttons feel flimsy

SPECIFICATIONS 21.3" LCD, 1,600x1,200 resolution, 16ms response time, 900:1 contrast ratio, DVI and D-sub inputs. **Part code** 60001491

HOTLIST 19" LCD

BELINEA 10 19 25



RATING ★★★★★

PRICE £200 inc VAT

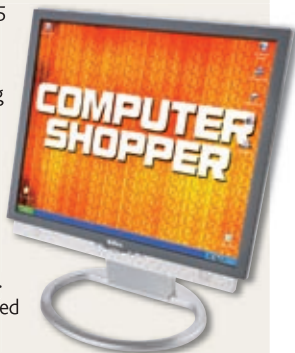
SUPPLIER www.247av.com

DETAILS www.belinea.co.uk

PRICE CUT

Belinea's 10 19 25 might be fairly ugly, but it has several redeeming features including excellent image quality. Colours are balanced and clean with an even backlight. Detail is maintained in dark areas, although skin tones lack warmth.

If you want a decent 19" LCD that doesn't cost a fortune, this is an excellent buy.



SPECIFICATIONS 1,280x1,024 native resolution, D-sub, DVI, speakers, three-port USB. **Part code** 10 19 25

HOTLIST 20.1" LCD

AOC LM2028



RATING ★★★★★

PRICE £390 inc VAT

SUPPLIER www.pcnextday.co.uk

DETAILS www.aocmonitor.com

AOC's LM2028 is cheaper than many 19" screens, but its 20.1" panel doesn't just give more display space, it provides a higher resolution of 1,600x1,200, too. It also produces a decent image, although whites aren't as true as we'd like. Unless you need perfect colour accuracy, though, it's a bargain.



SPECIFICATIONS 1,600x1,200 native resolution, D-sub, DVI. **Part code** TFT2090PS+

HOTLIST LCD PROJECTOR

PANASONIC PT-AE700

RATING ★★★★★

PRICE £959 inc VAT

SUPPLIER www.komplett.co.uk

DETAILS www.panasonic.co.uk

PRICE CUT

The PT-AE700 is a home cinema projector and its native 16:9 widescreen ratio is ideal for DVD, gaming and digital TV. Every connector is provided including component, SCART and HDMI, so you can enjoy a wide range of media with excellent image clarity. It is also one of the quietest projectors we've used. Bulb life is up to 4,000 hours in low lamp mode, though this requires a fully darkened room.



SPECIFICATIONS Three 0.7" LCDs, 1,280x720 resolution, 1,000 lumens, 2000:1 contrast ratio. **Part code** PTAE700EC

REVIEW 19" LCD

LG Flatron L1932P

RATING ★★★★★

PRICE £289 inc VAT

SUPPLIER LG 0870 607 5544

DETAILS www.lge.co.uk
EXCLUSIVE


LG's Flatron L1932 is one of the most flexible 19" displays we've seen. Its stand rotates, swivels, pivots and provides height adjustment. No matter how you sit or where you put the monitor, you can easily adjust it for the best view.

Fortunately, the display lives up to this early promise of quality, although it needed some fine adjustment to get the best picture. Out of the box we found that the display had too much contrast and the lighter colours of our colour wheel test blended into white too quickly. Adjusting the brightness and contrast on the display soon fixed this and resolved the issue. From this point on, colours were displayed accurately and there was good gradation on our greyscale test.

While the L1932P's stand is easy to adjust, you won't have to alter it too much to get the best picture, as the viewing angles of 170° (horizontal and vertical) are so good. From almost any angle the panel appeared to be evenly lit, which is impressive, as most monitors tend to introduce brighter patches as you move.

LG has implemented its Lightview technology here. A button on the front automatically adjusts the monitor's brightness and contrast settings for different predefined modes, including day photos, day movies and night movies. However, we didn't find that they made much difference.

As with all 19" monitors, the L1932P has a native resolution of 1,280x1,024, which is good for standard Windows applications and even games. Where this monitor really stands out is with its 4ms response time. It handles all games and movies brilliantly without ghosting; however, if you already have an 8ms monitor, there's not that much difference, so it's not worth upgrading.

Its flexible range of viewing positions and excellent image quality make the Flatron L1932 one of the best 19" monitors we've tested.

David Ludlow

✓ Excellent viewing angles; highly adjustable stand

✗ Might need to fine-tune settings to get a good picture

SPECIFICATIONS 19" LCD, 1,280x1,024 resolution, 4ms response time, 700:1 contrast ratio, DVI and D-sub inputs. **Part code** L1932P

REVIEW DLP PROJECTOR

MITSUBISHI XD110U

RATING ★★★★

PRICE £764 inc VAT

SUPPLIER www.misco.co.uk
DETAILS www.mitsubishi.co.uk


While it's possible to make DLP projectors smaller, such as HP's MP2220 (reviewed on page 32), larger projectors generally have better image quality. Mitsubishi's XD110U is about the same size as a phone book, but its image quality is very high.

Its native resolution of 1,024x768 means that it's designed for business use. Weighing 2.4kg, it's light enough to carry without really noticing, and it comes with a handy carry bag.

The XD110U has only analogue inputs, so we tested using the D-sub PC input. You can connect a DVD player through the S-video or composite inputs.

Image quality was excellent with accurate colour reproduction. High Definition (HD) video files looked great on the screen. However, it suffered from the rainbow effect on fast-moving scenes. This means that it isn't the best projector for watching movies. For its intended business market, though, it does a good job. Colour reproduction was great and our colour wheel test was displayed well.

The XD110U comes with a USB cable to connect it to your PC. The remote control has Page Up and Page Down buttons, which are useful for flicking through presentations, but you can't control the mouse with it. There's also a 2W speaker.

If you're after a projector for presentations, the XD110U is good value. It's bright and has excellent colour reproduction, but the rainbow effect means that it doesn't deal with moving images very well.

David Ludlow

✓ Light; comes with carry case

✗ Suffers from rainbow effect

SPECIFICATIONS DLP projector, 40-300" screen size, 1,024x768 resolution, S-video, D-sub and composite inputs, 1,700 ANSI lumens, 2,000 hours lamp life (4,000 hours in low mode), 2,000:1 contrast ratio, 2W speaker. **Part code** XD110U

CHOOSING AN... LCD MONITOR



Follow our simple step-by-step guide to buying the perfect LCD

1 LCD screens (also known as TFTs) offer a range of benefits over conventional CRT models, including compact designs and sharp, straight images. However, LCD technology also has its disadvantages.



Image quality can deteriorate at acute viewing angles, while the picture can appear fuzzy at resolutions below the native one. LCDs sometimes suffer from defective or 'dead' pixels and may produce distortions when displaying finely textured patterns.

2 A basic 17" LCD monitor (one with the specification shown in grey below) costs from £135, although similarly specified screens can cost as much as £300. The best models avoid the pitfalls mentioned above.

3 All 17" LCD screens have a native resolution of 1,280x1,024 pixels, which is fine for most applications. If you want a larger viewing area – useful for creative software – a 19" LCD is necessary. These start at around £300, but you'll need to spend £500 to get a 20" model with a 1,600x1,200 resolution. For entertainment, you'll need a widescreen monitor; 17" models start at around £300.

4 A video graphics array (VGA) input means the display will work with any PC, but a digital video interface (DVI) input removes unnecessary digital-to-analogue conversion of the picture, potentially improving sharpness and colour accuracy while eliminating interference. A DVI-equipped graphics card is required to use this.

5 Extras may include a USB hub, speakers, a microphone and even a TV tuner, which allows the display to double as a standalone TV.

FILL IN YOUR SPECS HERE
(Recommended minimum in grey)

IMAGE SIZE: 17"

NATIVE RESOLUTION: 1,280x1,024

INPUTS: VGA

EXTRAS:



REVIEW 17" LCD

EXCLUSIVE

ACER
AL1751

RATING ★★★★★

PRICE £188 inc VAT

SUPPLIER <http://uk.insight.com>DETAILS www.acer.co.uk

Playing games requires a quick monitor and Acer's AL1751 has a fast 8ms response time. This 17" display is designed for entertainment, and the screen has a reflective coating. While not ideal for offices and their harsh lighting, at home this makes a real difference. Colours look richer and deeper, while blacks appear darker.

The AL1751 flew through all our colour tests, showing excellent colour gradation and even distribution of light. The greyscale test, which is perhaps the hardest test to pass, was displayed with a nice even distribution and a subtle progressive change from black to white. It's only when you look really closely at the screen that you notice a very slight mottled appearance, which is likely to be caused by the reflective coating.

The fast response time means the AL1751 copes well with fast-moving images, such as those created by games and movies. We didn't detect any ghosting on any of our tests. The native resolution of 1,280x1,024 is high enough for day-to-day office tasks, too. The panel has good viewing angles, but you need to sit face-on to get the best picture.

Acer has fitted the AL1751 with a set of stereo speakers, which are hidden beneath a grille on the monitor's stand. They're typically poor and suitable only for Windows sounds, but the headphone socket on the side is useful.

With the controls neatly placed on the stand, this is a very easy monitor to configure. However, we'd have liked the stand to have more adjustment than just tilt. Still, at this price the AL1751 can't be beaten.

David Ludlow



✓ Excellent picture quality; easily adjustable settings

✗ Poor-quality speakers

SPECIFICATIONS 17" LCD, 1,280x1,024 resolution, 8ms response time, 500:1 contrast ratio, stereo speakers, DVI and D-sub inputs.
Part code ETL4008.011

REVIEW PORTABLE PROJECTOR

HP
MP2220

RATING ★★★★★

PRICE £998 inc VAT

SUPPLIER www.dabs.comDETAILS www.hp.co.uk

One of the main advantages of DLP projector technology is that it lets manufacturers make very small projectors. HP's MP2220 is just 201x165x61mm and weighs only 1.1kg. It's supplied with a carry case, so it's easy to transport from meeting to meeting.

With D-sub, S-video and composite inputs it's clearly designed for business use. Its 1,024x768 native resolution is more than acceptable for delivering a PowerPoint presentation, though.

We tested the projector using a PC input at its native resolution. At first, using the projector's Graphics mode, the screen had a green tinge to it. Only by switching the MP2220 to custom mode and adjusting the settings manually did we manage to get accurate colour reproduction.

It's far from perfect, though. Areas of high brightness aren't displayed very well and you can clearly see the colour wheel moving, causing a dark shadow to dance across the picture. Our colour wheel test showed good colour gradation except for the yellow portion of the spectrum. It displayed only a single shade of yellow, rather than neatly graded shades. It seemed fine when testing presentations, though. Testing using a High Definition file showed that the projector doesn't suffer badly from the rainbow effect.

HP supplies the MP2220 with a USB cable that connects to your PC. Using the supplied remote control, you can control your PC's cursor. Mouse control is a little tricky, but it's easy to move through slides. The projector gets very hot in the front at the exhaust vent, so it takes a while to power down (see our FAQ on page 30).

The small size, carrying case and wide range of peripherals make the MP2220 an attractive proposition. However, the noticeable colour wheel movement and difficulty producing colours detract from what could have been an excellent portable projector.

David Ludlow



✓ Small; carry case

✗ Gets very hot; has difficult with some colours

SPECIFICATIONS DLP projector, 31-246" screen size, 1,024x768 resolution, S-video, D-sub and composite inputs, 1,400 ANSI lumens, 4,000 hours lamp life, 2,000:1 contrast ratio, auto keystone correction, 1W speaker. Part code L1800A/ABU

REVIEW HOME CINEMA PROJECTOR

EPSON
EMP-TW600

RATING ★★★★★

PRICE £1,293 inc VAT

SUPPLIER www.247av.comDETAILS www.epson.co.uk

Epson's EMP-TW600 provides one of the biggest pictures we've seen: an impressive 60" from a throw distance of just 1.5m. This means you don't even need a very big room; if you can move the projector 9m away, though, you get a huge 300" display.

The lens can be moved horizontally and vertically without having to move the projector, so it's easy to line up with a screen. It uses the latest 3-LCD technology and a new iris, which gives a massive 5,000:1 contrast ratio. We ran our PC through the HDMI input to get the best signal and achieved an amazing picture. At the maximum brightness of 1,600 ANSI lumens the picture quality at the native resolution of 1,280x720 was amazing. The whites really stood out and colour reproduction was excellent across the board.

With a native widescreen resolution that supports High Definition (HD), this is a projector with entertainment on its mind. We tested it with HD WMV video files, which looked amazing, and standard resolution DVDs using the projector's component inputs. Here, the projector has to upscale the image, but it didn't cope very well to begin with. The first problem was that the projector wasn't handling the anamorphic 16:9 video. We had to put the projector on Squeeze mode, which doesn't make a lot of sense. An auto-sensing input or a simple widescreen option would be better.

Next we had to change the picture quality, scaling options and colour mode. By the time we'd finished the video looked better than on any other projector we've seen. The EMP-TW600 remembers settings for each input, so once you've got it the way you want it, you never have to change it.

Strangely, there's no dedicated ECO mode. Also, different colour modes do the same job, but the manual doesn't make it clear.

With an excellent range of inputs, huge picture size and amazing picture quality, the EMP-600 is worth every penny, but it could be easier to use.

David Ludlow



✓ Every input you could ever need; stunning image quality

✗ Menus aren't very intuitive

SPECIFICATIONS 3-LCD projector, 60-300" screen size, 1,280x720 resolution, HDMI, SCART, S-video, D-sub, component and composite inputs, 1,700 hours lamp life (3,000 hours in low lamp mode), 5,000:1 contrast ratio. Part code EMP-600W